Amendments to the Specification

Please amend the paragraph beginning page 1, line 8 as follows:

The storage of a large number of sound documents within mass-market equipment is known. The reproduction apparatus is fitted with an interface making it possible to easily retrieve the document desired by the user. The reproduction apparatuses are for example, personal audio CD players, personal players containing a hard disk (such as the MP3 Lyra model marketed by the applicant) capable of storing 300 hours of music, players for the home with display and remote control, personal computers with screen, hard disk, CD player and keyboard. In all cases, the user must introduce the specific identifier of the audio document to be reproduced. In the case of audio [[CDS]] CDs, he must program the number of the CD and the number of the piece within this CD. In certain cases, the reproduction apparatus is fitted with a player which displays the identifier of the audio document currently being reproduced. For example, the Lyra MP3 player has a small LCD screen making it possible to display the functions selected in the form of icons, and the numbers of the audio pieces. Home equipment has a hard disk of large capacity, 20 Gigabytes for example, thereby making it possible to store thousands of sound contents. The graphical interface consists of a large screen making it possible to display more information, the complete title of the piece for example.

Please amend the paragraph beginning page 6, line 34 as follows:

Once a certain number of audio contents have been stored in the memory 9. The, the user wants to reproduce them and to do so without too many manual interventions, he also wants the contents to follow one another with a similitude so as to maintain a harmonious ambiance. To do this, a software module of the navigator analyses each audio content during its reception and extracts the low-level parameters therefrom. As we indicated in the preamble at the beginning of the description, numerous signal analysis techniques exist which make it possible to obtain arrays of digital descriptors for these songs. The number of elements of a descriptor is of the order of a few tens.

Please amend the paragraph beginning page 8, line 1 as follows:

One way of proceeding consists in positioning identifier points Pi identifying each document of a group in a multidimensional space and in calculating the document situated nearest the equibarycentre of the set of these points. The equibarycentre is the centre of gravity of a set of points possessing the same mass. The positions of the points associated with each document are obtained on the basis of the low-level parameters, the space containing these points possesses as many dimensions as the document possesses low-level parameters.

Please amend the paragraph beginning page 9, line 26 as follows:

When the user navigates groupwise, the apparatus reproduces the sound document representing the group. In this way, the user can in an auditory manner ascertain the genre of sound or of music which is common to the set of documents of the group. A variant consists in the fact that a determined number of sound documents represent the group. According to this variant, these documents are reproduced loopwise when the group is selected. The representative documents are for example those situated at a distance less than a determined value from the equibarycentre. An improvement of this variant consists in the fact that the user himself determines the number of each group's representative documents. In this way, the user may instigate the reproduction of a significant number of documents having auditory continuity ~~and this have to~~ <u>without</u> select<u>ing</u> them manually. The first document selected by the program as representative is that of the group whose distance is smallest from the equibarycentre, then the second, then the third and so on and so forth. When the number programmed by the user is reached, the program selects the first document.

Please amend the paragraph beginning page 11, line 11 as follows:

According to an example of this second embodiment of the invention, the sound documents Di accessible from the player are virtually represented by points Pi disposed in a sound space with n dimensions. For the sake of simplicity and comprehension, this second exemplary embodiment uses a IS sound space with two dimensions. The layout

of FIG. 6 illustrates such an arrangement. The positions of the points Pi, defined by their coordinates (xi, yi) within the sound space, are calculated on the basis of the low-level parameters. According to the example of FIG. 3, a point Pi is an identifier representing a sound document Si. The coordinates (xi, yi) are obtained by projecting the point Pi whose coordinates are the values of the low-level descriptors onto a sound sample, onto a space of dimension 2, 3, etc., depending on the type of representation chosen. The projection from the space of descriptors to this two-dimensional space is determined through principal component analysis or PCA. PCA is described in particular in the Saporta document 1990, entitled "Probabilites Analyse de donnees et statistiques, Edition Technip" [Probabilities data analysis and statistics, published by Technip]. This data analysis algorithm is aimed at determining a subsystem of axes that is linearly tied to the original which best "spreads" the documents, the axes tend to merge the correlated original axes. In this way, the program can analyse the sound documents and itself determines principal dimensions. Then, it is then the program which chooses the number of dimensions of the sound space. According to this technique, the document collection can be represented by a space with more than two dimensions. It is thus possible to create a sound space with three dimensions in which the user moves around. In this case, the installation must be equipped with additional loudspeakers 5.11, and they must be arranged high up and low down so as to give the user the impression that the sound is also coming from high up or from low down. The low-level descriptors being assumed to have a perceptible coherence and the projection being continuous, the close points correspond to perceptually close sounds. In a general manner, the coordinates {x_i, y_2, . . . z_i} of a point Pi in a multidimensional space allow the user to determine the type of associated sound document. Specifically, the positions of the points Pi being calculated as a function of the values of low-level parameters, if two points are graphically distant, the values of the low-level parameters of the two sound documents identified by these two points are very different and hence, the type of the sound content is different, for example a piece of classical music and a political speech. On the other hand, if two points are close, then so also are the types of the associated sound documents from the auditory standpoint.

Please amend the paragraph beginning page 12, line 20 as follows:

The layout of FIG. 7 illustrates the details of the audio interface 5.10. The audio interface 5.10 is composed of two identical parts, one for reproduction on the left earphone 5.11 and the other for the right earphone 5.11. The number of documents selected by the program must be small, five for example. For each channel, the UC 5.3 associated with its program recorded in the memory 5.12 controls five selectors S1, S2, S3, S4 and S5 whose functions are to select a document from the set of audio documents of the memory 5.9 and to reproduce it. The five audio signals selected by the selectors Si are transmitted respectively to five preamplifiers A1, A2, A3, A4 and A5 whose gains are controlled by the UC 5.3. The gain of a preamplifier Ai reproducing an audio document Di is proportional to the distance between the sound space separating the point (xu, yu) and the point Pi, with coordinates (xi, yi) associated with this document. The gain also depends on the direction in which the point (xi, yi) is situated with respect to a straight line starting from the point (xu, yu) in the direction ahead of the user placed in the sound space. This straight line is represented by an arrow in FIG. ~~7~~6. So that, all the documents whose points Di are situated to the left of the user in the sound space are reproduced by the left channel, and those situated to the right are reproduced by the right channel. Moreover, the gain is all the larger as the angle between the segment formed of the points Pi and Pu, and the straight line Du representing the direction ahead of the user_decreases_. If the document is dead ahead of the user, the point Pi is therefore on this straight line Du so the user hears the audio content of this point equally well to the left and to the right. Finally, the five signals emitted by the preamplifiers are mixed in an adder amplifier and amplified before being dispatched to the earphones or loudspeakers 5.11.